Listing of Claims

1. (Currently Amended) A catheter ~~which is intended especially~~ for use in MR imaging and which includes

- a catheter sleeve ~~(2)~~,
- a hollow guide channel or lumen ~~(3)~~ within the catheter sleeve ~~(2)~~ for receiving a medical instrument, and
- two electrical conductors ~~(4)~~ which are enclosed by a cable sheath ~~(5)~~ of a dielectric material and serve for the transmission of RF signals within the catheter sleeve ~~(2)~~, the dielectric material having a relative permittivity (ε_r) smaller than 4, the diameter of the electrical conductors ~~(4)~~ being between 5 and 50 µm~~, notably between 10 and 30 µm,~~ and the distance between the electrical conductor ~~(4)~~ being smaller than 300 µm~~, in particular smaller than 200 µm~~.

2. (Currently Amended) A catheter as claimed in claim 1, ~~characterized in that~~ wherein the dielectric material has a relative permitivity which is smaller than 2.3~~, notably smaller than 1.5~~.

3. (Currently Amended) A catheter as claimed in claim 1, ~~characterized in that~~ wherein the dielectric material is an aerated synthetic material~~, notably FP301040 or FP301020 as marketed by Good Fellow~~.

4. (Currently Amended) A catheter as claimed in claim 1, ~~characterized in that~~ wherein the two electrical conductors ~~(4)~~ are also arranged to conduct a direct voltage to the voltage supply of a medical instrument arranged on or in the catheter ~~(1)~~.

5. (Currently Amended) A catheter as claimed in claim 1, ~~characterized in that~~ wherein it includes means for catheter localization during an intervention, ~~notably~~ said means fro catheter localization including at least one active coil ~~(4, 5)~~ which is arranged on or in the catheter ~~(1)~~.

6. (Currently Amended) An MR device for forming MR images of an object to be examined~~, intended especially for intravascular interventional MR imaging,~~ which device includes:

- a main field magnet system ~~(16)~~ for generating a homogeneous steady main magnetic field,
- a gradient coil system ~~(17, 18, 19)~~ for generating magnetic gradient fields,
- an RF coil system ~~(14)~~ for the exciting an examination zone,
- a receiving coil system ~~(14, 12)~~ for receiving MR signals from the examination zone,
- a catheter ~~(1) as claimed in claim 1~~ for introducing a medical instrument into the object ~~(10)~~ to be examined, ~~notably~~ said catheter comprising:

_____ an active coil ~~(4, 5)~~ which is arranged on or in the catheter ~~(1)~~ for the purpose of catheter localization, local excitation of the examination zone and/or local reception of MR signals~~,~~; two electrical conductors which are enclosed by a cable sheath of a dielectric material and serve for the transmission of RF signals within the catheter sleeve, the dielectric material having a relative permittivity (ε_r) smaller than 4, the diameter of the electrical conductors being between 5 and 50 μm and the distance between the electrical conductor being smaller than 300 μm; and

- a control unit ~~(23)~~ for controlling the MR device.